UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	Guenter Ries
Application Number:	10/591,086
Filing Date:	08/29/2006
Group Art Unit:	2832
Examiner:	Ramon M. Barrera
Title:	LINEAR DRIVE DEVICE WITH A MAGNET YOKE BODY AND A PERMANENT MAGNETIC ARMATURE

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

REPLY BRIEF

Pursuant to 37 CFR 41.41, Appellants hereby file a reply brief in response to the Examiner's Answer dated March 9, 2010, in the above-identified application, within the 2-month reply deadline.

Please charge Deposit Account No. 502786 for any deficiency or overpayment.

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(1) REAL PARTY IN INTEREST

The real party in interest is BSH Bosch und Siemens Hausgeräte GmbH.

(2) RELATED APPEALS AND INTERFERENCES

There are no appeals or interferences that will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) STATUS OF CLAIMS

Claims 14-31 are pending in the present application. Claims 1-13 were canceled. Claims 22-31 are allowed and claim 17 would be allowable if rewritten in independent form. Claims 14-16 and 18-21 stand finally rejected. The final rejections of claims 14-16 and 18-21 are being appealed. Claims 14 and 22 are independent.

(4) STATUS OF AMENDMENTS

There are no outstanding Amendments.

A final Office Action dated August 31, 2009, reopened prosecution after the filing of an Appeal Brief on May 4, 2009. Appellants reinstated the Appeal by filing a new Notice of Appeal in response to the final Office Action of August 31, 2009.

(5) SUMMARY OF CLAIMED SUBJECT MATTER

An exemplary embodiment of the present invention, as recited by, for example, independent claim 14, is directed to a linear drive device (2) ([001], page 1, line 6; [007], page 2, lines 13-14; [009], page 2, lines 23-25; [010], page 2, lines 27-29; [011], page 3, lines 7-11; [015], page 4, lies 1-2; [016], page 4, line 19; [024], page 4, lines 30-33, and page 5, lines 1-4; [0278], page 6, lines 1-5; [037], page 6, lines 24-25; [038], page 7, lines 6-8) that includes

an excitation winding (3) producing a variable magnetic field ([001], page 1, line 7; [009], page 2, lines 23-25; [010], page 2, lines 31-32; [014], page 3, lines 24-26; [024], page 5, lines 2-3, 12-14),

a magnetic-flux-guiding main yoke body (5, 16) accommodating the excitation winding (3) and having multiple limbs (5a-5c, 16a-16c) including a central limb ([008], page 2, lines 16-21; [010], page 2, lines 30-31; [011], page 3, lines 7-11; [014], page 3, lines 20-23; [020], page 4, line 23; [024], page 5, lines 2-4; [037], page 6, lines 25-26 and 29-31; [038], page 7, lines 6-7),

a winding-free counter-yoke body (6) disposed opposite to the main yoke body (5) ([001], page 1, lines 10-11; [011], page 3, lines 7-11; [015], page 4, lines 3-5; [019], page 4, line 21; [024], page 5, lines 4-11; [026], page 5, lines 28-30; [037], page 6, lines 25-26);

an axial gap (7) formed between the main yoke body (5, 16) and the counter-yoke body (6) ([001], page 1, lines 11-12; [024], page 5, lines 8-12; [037], page 6, lines 26-29),

an armature body (8) provided with at least two permanent magnetic magnet parts (9a, 9b) arranged axially one behind the other and having opposite magnetization (M) ([001], page

1, lines 15-16), each of the at least two magnet parts (9a, 9b) having a magnet axial extension dimension (d_{pm}), the armature body (8) being set in axially oscillating motion by the magnetic field of the excitation winding (3) in the axial gap (7) ([001], page 1, lines 17-18); [011], page 3, lines 9-11; [015], page 4, lines 3-5; [024], page 5, lines 8-18; 027], page 6, lines 2-5; [037], page 6, lines 26-29 and 31-32, and page 7, lines 1-4); [024], page 5, lines 8-18),

and

each of the multiple limbs (5a-5c, 16a-16c) of the main yoke body (5, 16) having a pole surface (F_p) facing the armature body (8) and defining a pole surface width dimension (b_j) extending across the axial width of the pole surface (F_p), the pole surface width dimension (b_j) of each of the multiple limbs (5a-5c, 16a-16c) being substantially the same, each of the multiple limbs (5a-5c, 16a-16c) being spaced apart from one another axially by a pole surface spacing dimension (b_w), the magnet axial extension dimension (b_{pm}) of each magnet part (9a, 9b) being approximately equal to the sum of the pole surface width dimension (b_j) and the pole surface spacing dimension (b_w) ([008], page 2, lines 17-21; [011], page 3, lines 9-11; [014], page 3, lines 26-30; [015], page 4, lines 6-8; ([025], page 5, lines 20-26); [027], page 6, lines 4-8; [037], page 6, lines 26-32, and page 7, lines 1-4).

Conventional yokes for linear drive devices have been kinked on a side facing the armature. Such conventional yokes are expensive to produce and it is difficult to arrange the windings in the windows of such conventional yokes.

In stark contrast, an exemplary embodiment of the present invention includes a pole surface width dimension of each of the multiple limbs being substantially the same, each of

the multiple limbs being spaced apart from one another axially by a pole surface spacing dimension, the magnet axial extension dimension of each magnet part being approximately equal to the sum of the pole surface width dimension and the pole surface spacing dimension.

In this manner, the yoke structure is greatly simplified.

Claim 15 depends from claim 14 and is directed to a drive device (2) further including winding windows (4) holding the excitation winding (3) between the limbs (16a-16c) and having a window axial extension dimension (d_w) extending between the adjacent limbs (16a-16c), and pole shoe bodies (17a-17b) disposed on the pole surfaces (Fp) of the limbs (16a-16c) of the main yoke body (16) and having a pole axial extension dimension (d_j) being greater than the window axial extension dimension (d_w) ([027], page 6, lines 1-8).

Claim 16 depends from claim 15 and is directed to a drive device (2) wherein the pole shoe bodies (17a-17b) are placed on the respective limbs (16a-16c) ([027], page 6, lines 1-8).

Claim 18 depends from claim 14 and is directed to a drive device (2) wherein the counter-yoke body (6) is embodied as plate-shaped ([026], page 5, lines 28-30).

Claim 19 depends from claim 14 and is directed to a drive device (2) wherein the pole surface width dimension (b_j) of at least one pole surface (F_p) is substantially the same as the stroke distance (H) of the armature body (8) during the oscillating movement ([015], page 4, lies 6-8; [024], page 5, lines 16-18; ([025], page 5, lines 20-26); [027], page 6, lines 1-8; [037], page 6, lines 29-32, and page 7, liens 1-6).

Claim 20 depends from claim 14 and is directed to a drive device (2) wherein the magnet parts (9a, 9b) are embodied as plate-shaped ([024], page 5, line 10).

Claim 21 depends from claim 14 and is directed to a drive device (2) wherein the armature body (8) is rigidly connected to a pump piston (11) of a compressor (V) ([024], page 5, lines 14-18).

As explained above, conventional yokes for linear drive devices have been kinked on a side facing the armature. Such conventional yokes are expensive to produce and it is difficult to arrange the windings in the windows of such conventional yokes.

In stark contrast, an exemplary embodiment of the present invention includes a pole surface width dimension of each of the multiple limbs being substantially the same, each of the multiple limbs being spaced apart from one another axially by a pole surface spacing dimension, the magnet axial extension dimension of each magnet part being approximately equal to the sum of the pole surface width dimension and the pole surface spacing dimension.

In this manner, the yoke structure is greatly simplified.

(6) GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

a. Whether claims 14, 18, and 20 are unpatentable under 35 U.S.C. § 102(b) over the JP2000-253640 reference,

b. Whether claims 14 and 18-20 are unpatentable under 35 U.S.C. § 102(b) over the JP2000-224829 reference,

c. Whether claims 15 and 16 are unpatentable under 35 U.S.C. § 103(a) over the JP2000-253640 reference in view of the Huth reference (EP 0915553), and

d. Whether claim 21 is unpatentable under 35 U.S.C. § 103(a) over the JP2000-253640 reference in view of the McGill et al. reference (US 2003/017384).

(7) ARGUMENT

a. Claims 14, 18, and 20 are patentable under 35 U.S.C. § 102(b) over the JP2000-253640 reference

The Office Action rejects claims 14, 18, and 20 under 35 U.S.C. § 102(b) as allegedly being anticipated by the JP2000-253640 reference. Appellants respectfully traverse this rejection.

Independent Claim 14

The JP2000-253640 reference does not teach or suggest the features of the claimed invention including a pole surface width dimension of each of the multiple limbs being substantially the same, each of the multiple limbs being spaced apart from one another axially by a pole surface spacing dimension, the magnet axial extension dimension of each magnet part being approximately equal to the sum of the pole surface width dimension and the pole surface spacing dimension as recited by independent claim 14. As explained above, these features are important for simplifying the yoke structure and thereby making it less expensive to manufacture and easier to install the windings.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. [...] The identical invention must be shown in as complete detail as is contained in the ... claim." M.P.E.P. § 2131.

First, the JP2000-253640 reference (based on an automated English language translation obtained from the Japan Patent Office web site) is completely silent with respect to a pole surface width dimension of each of the alleged multiple limbs 2a being substantially the same, as recited in claim 14. Indeed, the Office Action does not allege or mention that the JP2000-253640 reference discloses this feature.

Moreover, the JP2000-253640 reference does not state that the drawings are drawn to scale. When the reference does not disclose that the drawings are to scale and is silent as to dimensions, arguments based on measurement of the drawing features are of little value. See, e.g., M.P.E.P. § 2125. Even assuming in arguendo that Figure 7 is drawn to scale, the width of the central limb 2a clearly is larger than the width of the outer limbs.

Thus, the JP2000-253640 reference clearly fails to disclose or suggest a pole surface width dimension of each of the multiple limbs being substantially the same, as recited in claim 14.

Second, the JP2000-253640 reference fails to disclose or suggest the magnet axial extension dimension of each magnet part being approximately equal to the sum of the pole surface width dimension and the pole surface spacing dimension, as recited by independent claim 14.

In the final Office Action dated August 31, 2009, the rejection fails to establish or mention how the JP2000-253640 reference allegedly discloses these features. The Response to Arguments of the Office Action takes the position that page 2 of Applicants' specification discloses a range of +/- 10% for the sum of the pole surface width dimension and the pole surface spacing dimension, and that the claimed terms "substantially" and "approximately" are relative terms open to broad interpretation. However, neither the Response to Arguments nor the text of the rejection explains how the JP2000-253640 reference metes the claimed features.

The JP2000-253640 reference is completely silent with respect to the magnet axial extension dimension of each magnet part being approximately equal to the sum of the pole surface width dimension and the pole surface spacing dimension, as recited by independent claim 14. Moreover, as explained above, the JP2000-253640 reference does not state that the drawings are drawn to scale. When the reference does not disclose that the drawings are to scale and is silent as to dimensions, arguments based on measurement of the drawing features are of little value. See, e.g., M.P.E.P. § 2125.

Thus, the Office Action fails to establish that the JP2000-253640 reference discloses or suggests the magnet axial extension dimension of each magnet part being approximately equal to the sum of the pole surface width dimension and the pole surface spacing dimension, as recited by independent claim 14.

Examiner's Answer - Response to Arguments

In the Response to Arguments, the Examiner's Answer dated March 9, 2010, specifically agrees that the disclosure of the JP2000-253640 reference is silent with regards to the pole surface width dimension of each yoke limb 2a being substantially the same or that the magnet axial extension dimension of each magnet part being approximately equal to the sum of the pole surface width dimension and the pole surface spacing dimension.

However, the Examiner's Answer asserts that these two conditions represent an ***optimized*** magnetic circuit design *inherent* in the reference. The Examiner's Answer attached a diagram that allegedly explains the Examiner's position, along with an English translation of the applied reference.

Appellants respectfully traverse this rejection.

As set forth in M.P.E.P. § 2112:

> The fact that a certain result or characteristic **may** occur or be present in the prior art is **not** sufficient to establish the inherency of that result or characteristic. In re Rijckaert, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993) (**reversed rejection** because inherency was based on what would result due to ***optimization*** of conditions, not what was necessarily present in the prior art); In re Oelrich, 666 F.2d 578, 581-82, 212 USPQ 323, 326 (CCPA 1981). "To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so

recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.' " In re Robertson, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999)(citations omitted).

[...]

"In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." Ex parte Levy, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990).

Emphasis added Appellants.

Appellants respectfully submit that the Examiner's Answer fails to establish a prima facie case since the Examiner's Answer specifically acknowledges that the rejection is based on optimization, not what was necessarily present in the prior art reference.

Additionally, Appellants respectfully submit that the Examiner's Answer fails to provide objective evidence or cogent technical reasoning to support the conclusion of inherency.

The Examiner's Answer attached a diagram that attempts to explain the magnetic forces acting on the armature "where Fig. A allegedly represents the beginning and Fig. B the end of a rightward stroke." The Examiner's Answer asserts that "Fig. C represents the

beginning of a left armature stroke when the current in the coil is reversed" and that "Fig. D represents the forces acting on the armature at the beginning of a right side stroke where the magnet axial extension dimension of each magnet part is less than the sum of the pole surface width dimension and the pole surface spacing dimension." Emphasis added Appellants. The Examiner's Answer asserts that "the magnetic circuit in Fig. D will not function to accelerate the armature to the right."

Appellants respectfully submit that the Examiner's Answer fails to explain the significance of these assertions, or to explain how the above-referenced assertions establish that the features of the claims allegedly are inherently (i.e., necessarily) present in the JP2000-253640 reference. Furthermore, Appellants respectfully submit that it is unclear whether the assertions in the Examiner's Answer are based on the teachings of the JP2000-253640 reference. Moreover, Appellants respectfully submit that the Examiner's Answer has not asserted that any of these features, or the features of the claims, are inherently (i.e., necessarily) present in the JP2000-253640 reference. Appellants respectfully submit that Appellants properly cannot rebut the merits of these assertions since the Examiner's Answer does not present cogent technical reasoning to support the conclusion of inherency.

For at least the foregoing reasons, Appellants respectfully submit that the final Office Action and the Examiner's Answer fail to establish that the JP2000-253640 reference necessarily (i.e., inherently) discloses the magnet axial extension dimension of each magnet part being approximately equal to the sum of the pole surface width dimension and the pole surface spacing dimension, as recited by independent claim 14. As explained above, these

features are important for simplifying the yoke structure and thereby making it less expensive to manufacture and easier to install the windings.

Appellants respectfully request reversal of this rejection.

b. Claims 14 and 18-20 are patentable under 35 U.S.C. § 102(b) over the JP2000-224829 reference

The Office Action rejects claims 14 and 18-20 under 35 U.S.C. § 102(b) as allegedly being anticipated by the JP2000-224829 reference. Appellants respectfully traverse this rejection.

Independent Claim 14

The JP2000-224829 reference does not teach or suggest the features of the claimed invention including a pole surface width dimension of each of the multiple limbs being substantially the same, each of the multiple limbs being spaced apart from one another axially by a pole surface spacing dimension, the magnet axial extension dimension of each magnet part being approximately equal to the sum of the pole surface width dimension and the pole surface spacing dimension as recited by independent claim 14. As explained above, these features are important for simplifying the yoke structure and thereby making it less expensive to manufacture and easier to install the windings.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. [...] The identical invention must be shown in as complete detail as is contained in the ... claim." M.P.E.P. § 2131.

First, Appellants respectfully submit that the JP2000-224829 reference is completely silent with respect to a pole surface width dimension of each of the alleged multiple limbs being substantially the same, as recited in claim 14. Indeed, the Office Action does not allege or mention that the JP2000-224829 reference discloses this feature.

Moreover, the JP2000-224829 reference does not state that the drawings are drawn to scale. When the reference does not disclose that the drawings are to scale and is silent as to dimensions, arguments based on measurement of the drawing features are of little value. See, e.g., M.P.E.P. § 2125.

Thus, the JP2000-224829 reference clearly fails to disclose or suggest a pole surface width dimension of each of the multiple limbs being substantially the same, as recited in claim 14.

Second, the JP2000-224829 reference fails to disclose or suggest the magnet axial extension dimension of each magnet part being approximately equal to the sum of the pole surface width dimension and the pole surface spacing dimension, as recited by independent claim 14.

The JP2000-224829 reference is completely silent with respect to the magnet axial extension dimension of each magnet part being approximately equal to the sum of the pole

surface width dimension and the pole surface spacing dimension, as recited by independent claim 14. Moreover, as explained above, the JP2000-224829 reference does not state that the drawings are drawn to scale. When the reference does not disclose that the drawings are to scale and is silent as to dimensions, arguments based on measurement of the drawing features are of little value. See, e.g., M.P.E.P. § 2125.

Thus, the final Office Action dated August 31, 2009, fails to establish that the JP2000-224829 reference discloses or suggests the magnet axial extension dimension of each magnet part being approximately equal to the sum of the pole surface width dimension and the pole surface spacing dimension, as recited by independent claim 14.

Examiner's Answer - Response to Arguments

In the Response to Arguments, the Examiner's Answer dated March 9, 2010, asserts that "the response to applicant's similar arguments towards claims 14, 18, and 20 are supplied above in connection with the JP2000-253640 reference."

Hence, the Examiner's Answer apparently asserts that features of claim 14 represent an ***optimized*** magnetic circuit design that also allegedly are *inherent* in the JP2000-224829 for the same reasons as the JP2000-253640 reference.

Appellants respectfully traverse this rejection.

As set forth in M.P.E.P. § 2112:

The fact that a certain result or characteristic **may** occur or be present in the prior art is **not** sufficient to establish the inherency of that result or characteristic. In re Rijckaert, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993) (**reversed rejection** because inherency was based on what would result due to ***optimization*** of conditions, not what was necessarily present in the prior art); In re Oelrich, 666 F.2d 578, 581-82, 212 USPQ 323, 326 (CCPA 1981). "To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.' " In re Robertson, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999)(citations omitted).

[...]

"In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." Ex parte Levy, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990).

Emphasis added Appellants.

Appellants respectfully submit that the Examiner's Answer fails to establish a prima facie case since the Examiner's Answer specifically acknowledges that the rejection is based on optimization, not what was necessarily present in the prior art reference.

Additionally, Appellants respectfully submit that the Examiner's Answer fails to provide objective evidence or cogent technical reasoning to support the conclusion of inherency.

The Examiner's Answer attached a diagram that attempts to explain the magnetic forces acting on the armature "where Fig. A allegedly represents the beginning and Fig. B the end of a rightward stroke." The Examiner's Answer asserts that "Fig. C represents the beginning of a left armature stroke when the current in the coil is reversed" and that "Fig. D represents the forces acting on the armature at the beginning of a right side stroke where the magnet axial extension dimension of each magnet part is less than the sum of the pole surface width dimension and the pole surface spacing dimension." Emphasis added Appellants. The Examiner's Answer asserts that "the magnetic circuit in Fig. D will not function to accelerate the armature to the right."

Appellants respectfully submit that the Examiner's Answer fails to explain the significance of these assertions, or to explain how the above-referenced assertions establish that the features of the claims allegedly are inherently (i.e., necessarily) present in the JP2000-224829 reference. Furthermore, Appellants respectfully submit that it is unclear whether the assertions in the Examiner's Answer are based on the teachings of the JP2000-224829 reference. Moreover, Appellants respectfully submit that the Examiner's Answer has not

asserted that any of these features, or the features of the claims, are inherently (i.e., necessarily) present in the JP2000-224829 reference. Appellants respectfully submit that Appellants properly cannot rebut the merits of these assertions since the Examiner's Answer does not present cogent technical reasoning to support the conclusion of inherency.

For at least the foregoing reasons, Appellants respectfully submit that the final Office Action and the Examiner's Answer fail to establish that the JP2000-224829 reference necessarily (i.e., inherently) discloses the magnet axial extension dimension of each magnet part being approximately equal to the sum of the pole surface width dimension and the pole surface spacing dimension, as recited by independent claim 14. As explained above, these features are important for simplifying the yoke structure and thereby making it less expensive to manufacture and easier to install the windings.

Appellants respectfully request reversal of this rejection.

Claim 19

The JP2000-224829 reference does not teach or suggest the features of the claimed invention including (1) "a magnetic-flux-guiding main yoke body accommodating the excitation winding and having multiple limbs including a central limb; [...] and each of the multiple limbs of the main yoke body having a pole surface facing the armature body and defining a pole surface width dimension extending across the axial width of the pole surface," as recited in independent claim 14, and (2) "the pole surface width dimension of at least one pole surface is substantially the same as the stroke distance of *the armature body* during the

oscillating movement," as recited by claim 19. As explained above, these features are important for simplifying the yoke structure and thereby making it less expensive to manufacture and easier to install the windings.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. [...] The identical invention must be shown in as complete detail as is contained in the ... claim." M.P.E.P. § 2131.

The final Office Action dated August 31, 2009, alleges that Figures 4-6 of the JP2000-224829 reference disclose embodiments where the armature stroke is confined by counter yoke legs 16(a, b) to a distance substantially the same as the pole surface width dimension of at least one pole surface.

However, the embodiments of Figures 4-6 clearly do not disclose a magnetic-flux-guiding main yoke body accommodating the excitation winding and having multiple limbs including a central limb; [...] and each of the multiple limbs of the main yoke body having a pole surface facing the armature body as recited in independent claim 14, from which claim 19 depends.

The embodiments of Figures 5 and 6 are closed only at a single end, and therefore, clearly cannot be said to confine the armature stroke, absent an explicit disclosure in the JP2000-224829 reference. The JP2000-224829 reference is silent with respect to confining the armature stroke.

The embodiment of Figure 4 of the JP2000-224829 reference is closed at both ends and is alleged to confine the armature stroke. However, the embodiment of Figure 4 of the JP2000-224829 reference very clearly discloses only a single limb that has a pole surface facing the armature body. Thus, the embodiment of Figure 4 clearly does not disclose a magnetic-flux-guiding main yoke body accommodating the excitation winding and having multiple limbs including a central limb; [...] and each of the multiple limbs of the main yoke body having a pole surface facing the armature body as recited in independent claim 14, from which claim 19 depends.

Thus, contrary to the assertions in the final Office Action dated August 31, 2009, the JP2000-224829 reference clearly fails to anticipate claim 19.

Examiner's Answer - Response to Arguments

With respect to claim 19, in the Response to Arguments, the Examiner's Answer dated March 9, 2010, asserts that " 'the pole surface width dimension of at least one pole surface is substantially the same as the stroke distance of the armature body during the oscillating movement' represents ***optimization*** of the magnetic circuit. With reference to attached Figs. A-C, the Examiner's Answer asserts that "exceeding this stroke distance results in the armature overrunning the yoke resulting in reduced stroke force at the extremities."

Hence, the Examiner's Answer apparently asserts that features of claim 19 represent an ***optimized*** magnetic circuit design that allegedly are *inherent* in the JP2000-224829 reference.

Appellants respectfully traverse this rejection.

Appellants respectfully submit that the Examiner's Answer fails to establish a prima facie case since the Examiner's Answer specifically acknowledges that the rejection is based on optimization, not what was necessarily present in the prior art reference.

Additionally, Appellants respectfully submit that the Examiner's Answer fails to provide objective evidence or cogent technical reasoning to support the conclusion of inherency.

Appellants respectfully submit that the Examiner's Answer fails to explain the significance of these assertions, or to explain how the above-referenced assertions establish that the features of the claims allegedly are inherently (i.e., necessarily) present in the JP2000-224829 reference. Furthermore, Appellants respectfully submit that it is unclear whether the assertions in the Examiner's Answer are based on the teachings of the JP2000-224829 reference. Moreover, Appellants respectfully submit that the Examiner's Answer has not asserted that any of these features, or the features of the claims, are inherently (i.e., necessarily) present in the JP2000-224829 reference. Appellants respectfully submit that Appellants properly cannot rebut the merits of these assertions since the Examiner's Answer does not present cogent technical reasoning to support the conclusion of inherency.

The Examiner's Answer attached diagrams A-D to attempt to explain the magnetic forces acting on the armature. The Examiner's Answer asserts that "exceeding this stroke distance results in the armature overrunning the yoke resulting in *reduced stroke force* at the extremities." Emphasis added Appellants.

Appellants respectfully submit that the assertion that such would "reduce the stroke force" fails to explain how or why the claimed features necessarily (i.e., inherently) are present in the JP2000-224829 reference. Indeed, a finding of inherency cannot be substantiated simply because the prior art does not achieve the *optimum* stroke force. There is nothing that states that the prior art reference must perform at an optimum level.

For at least the foregoing reasons, Appellants respectfully submit that the final Office Action and the Examiner's Answer fail to establish that the JP2000-224829 reference necessarily (i.e., inherently) discloses the magnet axial extension dimension of each magnet part being approximately equal to the sum of the pole surface width dimension and the pole surface spacing dimension, as recited by independent claim 14. As explained above, these features are important for simplifying the yoke structure and thereby making it less expensive to manufacture and easier to install the windings.

Appellants respectfully request reversal of this rejection.

c. Claims 15 and 16 are patentable under 35 U.S.C. § 103(a) over the JP2000-253640 reference in view of the Huth reference (EP 0915553)

The final Office Action dated August 31, 2009, rejects claims 15 and 16 under 35 U.S.C. § 103(a) as allegedly being unpatentable over the JP2000-253640 reference in view of the Huth reference (EP 0915553). Appellants respectfully traverse this rejection.

None of the applied references teaches or suggests the features of the claimed invention including a pole surface width dimension of each of the multiple limbs being substantially the same, each of the multiple limbs being spaced apart from one another axially by a pole surface spacing dimension, the magnet axial extension dimension of each magnet part being approximately equal to the sum of the pole surface width dimension and the pole surface spacing dimension as recited by independent claim 14. This feature is important for simplifying the yoke structure and thereby making it less expensive to manufacture and easier to install the windings.

As explained above, the JP2000-253640 reference does not teach or suggest these features.

The Huth reference does not remedy the deficiencies of the JP2000-253640 reference.

The final Office Action dated August 31, 2009, appears to suggest that it would have been obvious to one of ordinary skill in the art to provide the pole shoes that are disclosed by the Huth reference to the limbs of the JP2000-253640 reference. The Office Action makes the conclusory statement that such would have been obvious because "these two pole structures were art- recognized equivalents." Appellants respectfully submit that such a conclusory statement is insufficient to provide a prima facie case for obviousness because the Office Action fails to provide an adequate rationale for combining the prior art as required by KSR International v. Teleflex Inc. 82 U.S.P.Q. 2d 1385 (2007).

"[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rationale

underpinning to support the legal conclusion of obviousness." (In re Kahn, 441 F.3d 977, 988 (CA Fed. 2006) cited with approval in KSR).

The final Office Action dated August 31, 2009, fails to provide any articulated reasoning with any rationale underpinning to support a legal conclusion of obviousness. As such, the Office Action fails to present a prima facie case for obviousness.

The final Office Action dated August 31, 2009, has provided no articulated reasoning to combine the teachings and suggestions of the Huth reference with the JP2000-253640 reference to arrive at the claimed invention, except from using Appellants' invention as a template through hindsight reconstruction of Appellants' claims.

Moreover, Appellants respectfully submit that one of ordinary skill in the art would not have combined the teachings of the Huth reference with the JP2000-253640 reference. The references are directed to completely different and unrelated problems.

One of ordinary skill in the art who was concerned with the problems with which the Huth reference is concerned with solving would not have referred to the JP2000- 253640 reference, and vice-versa, because the JP2000-253640 reference is concerned with completely different and unrelated problems. Thus, these references would not have been combined.

Examiner's Answer - Response to Arguments

In the Response to Arguments, the Examiner's Answer dated March 9, 2010, states that "a motivation for the combination is ***inherent*** in Huth, i.e., pole shoes enable the secure

retention of the coil on the core limb which would otherwise be subject to displacement due to gravitational force and/or vibrations of the mechanism." Emphasis added Appellants.

First, Appellants respectfully submit that the Huth reference does not remedy the deficiencies of the JP2000-253640 reference with respect to independent claim 14, from which claims 15 and 16 depend.

Second, Appellants respectfully submit that the Office Action fails to explain how these features allegedly are "inherent" (i.e., necessary) in the Huth reference. Appellants respectfully submit that such a conclusory statement is insufficient to provide a prima facie case for obviousness because the Office Action fails to provide an adequate rationale for combining the prior art as required by KSR International v. Teleflex Inc. 82 U.S.P.Q. 2d 1385 (2007).

The final Office Action and the Examiner's Answer fail to provide any articulated reasoning with any rationale underpinning to support a legal conclusion of obviousness. As such, the Office Action and Examiner's Answer each fail to present a prima facie case for obviousness.

Appellants respectfully request reversal of this rejection.

d. Claim 21 is patentable under 35 U.S.C. § 103(a) over the JP2000-253640 reference in view of the McGill et al. reference (US 2003/017384)

The final Office Action dated August 31, 2009, rejects claim 21 under 35 U.S.C. § 103(a) as allegedly being unpatentable over the JP2000-253640 reference in view of the McGill et al. reference. Appellants respectfully traverse this rejection.

None of the applied references teaches or suggests the features of the claimed invention including a pole surface width dimension of each of the multiple limbs being substantially the same, each of the multiple limbs being spaced apart from one another axially by a pole surface spacing dimension, the magnet axial extension dimension of each magnet part being approximately equal to the sum of the pole surface width dimension and the pole surface spacing dimension as recited by independent claim 14. This feature is important for simplifying the yoke structure and thereby making it less expensive to manufacture and easier to install the windings.

As explained above, the JP2000-253640 reference does not teach or suggest these features.

The McGill et al. reference does not remedy the deficiencies of the JP2000- 253640 reference.

The final Office Action appears to suggest that it would have been obvious to one of ordinary skill in the art to provide the pole shoes that are disclosed by the McGill et al.

reference to the limbs of the JP2000-253640 reference. The Office Action makes the conclusory statement that such would have been obvious because "these two pole structures were art-recognized equivalents." Appellants respectfully submit that such a conclusory statement is insufficient to provide a prima facie case for obviousness because the Office Action fails to provide an adequate rationale for combining the prior art as required by KSR International v. Teleflex Inc. 82 U.S.P.Q. 2d 1385 (2007).

"[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rationale underpinning to support the legal conclusion of obviousness." (In re Kahn, 441 F.3d 977, 988 (CA Fed. 2006) cited with approval in KSR).

The final Office Action does not provide any articulated reasoning with any rationale underpinning to support a legal conclusion of obviousness. As such, the Office Action fails to present a prima facie case for obviousness.

The final Office Action has provided no articulated reasoning to combine the teachings and suggestions of the McGill et al. reference with the JP2000-253640 reference to arrive at the claimed invention, except from using Appellants' invention as a template through hindsight reconstruction of Appellants' claims.

Moreover, Appellants respectfully submit that one of ordinary skill in the art would not have combined the teachings of the McGill et al. reference with the JP2000- 253640 reference. The references are directed to completely different and unrelated problems.

One of ordinary skill in the art who was concerned with the problems with which the McGill et al. reference is concerned with solving would not have referred to the JP2000-253640 reference, and vice-versa, because the JP2000-253640 reference is concerned with completely different and unrelated problems. Thus, these references would not have been combined.

Examiner's Answer - Response to Arguments

In the Response to Arguments, the Examiner's Answer dated March 9, 2010, asserts that "Appellant has not presented an argument in support of the separate patentability of claim 21 and is therefore deemed to rise or fall together with the patentability of its parent claim 14."

Appellants respectfully submit that the Appeal Brief traversed this rejection and pointed out that the final Office Action makes the conclusory statement that such would have been obvious because "these two pole structures were art-recognized equivalents." The Appeal Brief argued that such a conclusory statement is insufficient to provide a prima facie case for obviousness because the Office Action fails to provide an adequate rationale for combining the prior art as required by KSR International v. Teleflex Inc. 82 U.S.P.Q. 2d 1385 (2007).

The Appeal Brief also argued that the final Office Action does not provide any articulated reasoning with any rationale underpinning to support a legal conclusion of obviousness. As such, the Office Action fails to present a prima facie case for obviousness.

The final Office Action did not articulate any reasoning to combine the teachings and suggestions of the McGill et al. reference with the JP2000-253640 reference to arrive at the claimed invention, except from using Appellants' invention as a template through hindsight reconstruction of Appellants' claims.

Moreover, the Appeal Brief argued that one of ordinary skill in the art would not have combined the teachings of the McGill et al. reference with the JP2000- 253640 reference. The references are directed to completely different and unrelated problems.

The Appeal Brief argued that one of ordinary skill in the art who was concerned with the problems with which the McGill et al. reference is concerned with solving would not have referred to the JP2000-253640 reference, and vice-versa, because the JP2000-253640 reference is concerned with completely different and unrelated problems. Thus, these references would not have been combined.

Appellants respectfully request reversal of this rejection.

(8) CONCLUSION

In view of the foregoing discussion, Appellants respectfully request reversal of the Examiner's rejections.

Respectfully submitted,

/Andre Pallapies/

Andre Pallapies
Registration No. 62,246
April 28, 2010

BSH Home Appliances Corporation
100 Bosch Blvd.
New Bern, NC 28562
Phone: 252-672-7927
Fax: 714-845-2807
andre.pallapies@bshg.com

CLAIMS APPENDIX

1 – 13. (Cancelled)

14. (Rejected) A linear drive device comprising:

an excitation winding producing a variable magnetic field;

a magnetic-flux-guiding main yoke body accommodating the excitation winding and having multiple limbs including a central limb;

a winding-free counter-yoke body disposed opposite to the main yoke body; an axial gap formed between the main yoke body and the counter-yoke body;

an armature body provided with at least two permanent magnetic magnet parts arranged axially one behind the other and having opposite magnetization, each of the at least two magnet parts having a magnet axial extension dimension, the armature body being set in axially oscillating motion by the magnetic field of the excitation winding in the axial gap; and

each of the multiple limbs of the main yoke body having a pole surface facing the armature body and defining a pole surface width dimension extending across the axial width of the pole surface, the pole surface width dimension of each of the multiple limbs being substantially the same, each of the multiple limbs being spaced apart from one another axially by a pole surface spacing dimension, the magnet axial extension dimension of each magnet part being approximately equal to the sum of the pole surface width dimension and the pole surface spacing dimension.

15. (Rejected) The drive device according to claim 14, further comprising:

winding windows holding the excitation winding between the limbs and having a window axial extension dimension extending between the adjacent limbs; and

pole shoe bodies disposed on the pole surfaces of the limbs of the main yoke body and having a pole axial extension dimension being greater than the window axial extension dimension.

16. (Rejected) The drive device according to claim 15, wherein the pole shoe bodies are placed on the respective limbs.

17. (Allowable)

18. (Rejected) The drive device according to claim 14, wherein the counter-yoke body is embodied as plate-shaped.

19. (Rejected) The drive device according to claim 14, wherein the pole surface width dimension of at least one pole surface is substantially the same as the stroke distance of the armature body during the oscillating movement.

20. (Rejected) The drive device according to claim 14, wherein the magnet parts are embodied as plate-shaped.

21. (Rejected) The drive device according to claim 14, wherein the armature body is rigidly connected to a pump piston of a compressor.

22-31. (Allowed)

EVIDENCE APPENDIX

None

RELATED APPEALS APPENDIX

None